THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1342. MARCH 28, 1914. VOL. XXVI.

THE NEED FOR STUDY.

It was once a proverb in our profession that a man must be a good castrator and obstetrician to be a successful country practitioner, and a good judge of lameness to succeed in the town. Like most such aphorisms, this one was never absolutely true, but for many years there was an element of truth in it. There were many practices in which the most important part of the work came under one of these two headings.

Our profession has changed greatly since then. Obstetrics is certainly no more important in the country than it used to be—perhaps less so to us. There is a tendency—not always a wise one, we think—to relinquish castration; and the importance of lameness is dwindling everywhere. New work is coming into our hands to counterbalance this, but all of it requires new knowledge. The canine and feline practice that is now so important in town and country alike, has forced us to study new patients, of whose diseases most of us knew very little twenty-five years ago. And even in our old patients there is now much more for us to know than there once was. Many more diseases are recognised, and in many cases the diagnostic methods are far more delicate than in the old days. Preventive medicine, which now concerns most practitioners more or less, is largely carried on by these finer diagnostic methods. Throughout all our work the demands upon the practitioner's knowledge are greater than before. This is true to-day, but it will be much more true a decade hence.

Veterinary practice is rapidly becoming permeated with special subjects, some so complex as only to be fully grasped by specialists. Nevertheless, the practitioner is required to possess a sound, if in some cases an elementary knowledge of all. Clinical medicine and surgery, bacteriology, protozoology, parasitology, vaccine and serum therapy, hygiene, dietetics—the man in practice, though he may not study all of these very deeply, cannot afford to neglect one. The more he learns of each, the better he will grasp the daily problems of his work.

But there is now so much for the clinician to know that very few will attain true competence without a little reading practically every day. General Smith, in a well-considered address to Army officers a few years ago, suggested one hour daily as probably sufficient, which, if backed by observation and practice, it should be. Something like that is essential to the practitioner, unless he is to fall behind the times in some respects.

ALOPECIA TOXICA.

The accompanying photographs are of a bay gelding belonging to a cavalry regiment.

The animal after suffering from catarrhal fever was to all appearance convalescent when he was suddenly attacked with œdema of both hind legs, and the under surface of the belly. There was no digestive disturbance. The œdema disappeared in a few days and the coat became loose, so that it could be plucked out in handfulls. Finally the animal presented the appearance of baldness seen in the illustrations. It will be noticed that the long hair of the body, *i.e.*, mane and tail, also the coarser hair on the lower part of the limbs was not affected.

The horse fed well, and was apparently not at all disturbed by the condition. After about a month it has quite recovered, grown a beautiful new spring coat, and is again at duty.

J. R. HODGKINS, F.R.C.V.S., Capt. A.V.C.

Dublin.

THE TREATMENT OF CONTAGIOUS ABORTION WITH "BISSULIN."

Owing to the success I have had with the use of this agent, I think it right to place my experience at the disposal of my *confrères*. I have also had some communication with my friends, Mr. J. F. Healy, of Midleton, Co. Cork, and Mr. Allan Baker, of Bansha, Co. Tipperary.

I have singled out three special cases in my own practice for the subject of these notes.

The first case, in 1912, was in a herd of twenty-two cows, the property of a widow, near Limerick. Eleven of these cows had aborted, and the twelfth aborted within twenty-four hours of the time I began treatment, and the disease then stopped. In this case the infection was traced to allowing a neighbour's cow to be served by the bull on the farm.

In the second case, in 1913, there were eighteen cows, six of which had aborted, seventeen of which I treated, and the eighteenth was brought into the byre, subsequent to the treatment of the others. This cow received no treatment, and aborted after she had been in the byre a month. The cause of infection was again directly traceable to an outside cow.

The third was in the herd of the Earl of Dunraven, at Adare, and out of thirty cows ten had aborted, and one or two came in season regularly, but did not stand to the bull. In this case the bull, which was a prize Aberdeen Angus, had been

allowed to serve cows outside the owner's, and on examination he was found to be badly affected with infective granulommata of the genital organs, and the testicles were very much swollen.

I have also tried "Bissulin" with two or three mares which did not stand to the stallion, and had, in each case, vaginitis, and found it very successful.

Directions for the use of "Bissulin" are supplied by the makers with each package, but it is advisable in some cases to modify the treatment, taking into account the severity of the vaginitis, which is nearly always present. I have also found "Bissulin" effective in the cases of abortion where no vaginitis was apparent, and, in my opinion, in these cases the entrance of the germ is by the genital organs, despite the theories advanced against this opinion. Were it otherwise, local treatment would be of no avail.

In Mr. Baker's notes, he says "I have had most excellent results in the thoroughbred mares with which I used "Bissulin." It has also continued to be very successful in the cases of contagious abortion in cows," and writing later on, he says, "Just a line to let you know how the "Bissulin" is doing for me. I may say it has been an unequalled success both in cattle and in brood mares. I have treated about three hundred cows suffering from contagious abortion, and in every case the result has been most satisfactory. In thoroughbred mares it has been equally good. Whether used in the troublesome cases where there is an abundant white discharge, or in the equally annoying cases of an acid secretion of the vagina, the result is always gratifying. I have one mare which I showed you when you were over here that had suffered from a thick white discharge for five years, and she has been perfectly cured and is heavy in foal, due to "Bissulin" having cured the interior of the womb. I have several other cases of valuable mares treated with "Bissulin" and proving in foal, which were barren before using it. In all twenty-five mares."

"Bissulin" is put up in small conical pessaries for use in the mare and cow, and very little skill is required in using it in either of these animals, but in the case of the bull, for which it is put up in small cylindrical pessaries, there is sometimes a difficulty in inserting them into the sheath, and the bull should be, if possible, treated by the veterinary surgeon himself, but an intelligent herd is quite capable with a little demonstration, of carrying out the treatment in cows. In addition to the use of "Bissulin" the hind quarters of the cows, and their hind legs and tails, should be thoroughly cleansed and disinfected periodically, so also should the walls and floor of the byre and stable.

"Bissulin" has the advantage of being a non-irritant as well as a germicide and antacid, and is odourless, which is a decided advantage. "Bissulin" is made up of different fats and contains 25 per cent of strong Sozojodol mercury.

The cases I have stated are only three of many, but they were all cases in which the disease had been rampant before treatment, and in each it had entirely disappeared after proper precautions had been taken, and the cows which had previously been sterile proved in calf afterwards; several mares I have treated have also proved in foal, and the results I have had in my experience tally with those of Mr. Baker, extracts from whose letter I have given above.

Mr. Healy had also promised me some notes, but they are not to hand yet.

E. C. WINTER, F.R.C.V.S.

Limerick.

NOTES ON MAL DE CADERAS.

By Capt. A. L. FARRANT, F.R.C.V.S., M.R.S.I.LOND.

Synonyms.—Peste de caderas (Brazil), Mal de caderas, tumby-baba or tumby-a (Paraguay, Argentine), Flagellosis of equidæ, trypanosomiasis of equidæ.

Mal de caderas, disease of the rump or hind-quarters, is an epizootic disease of horses, mules, and asses occurring in South America. The trypanosome, which is the causal agent, was discovered by Dr. Elmassian, Director of the Bacteriological Institute in Asuncion, the capital of Paraguay. The organism, Trypanosoma equinum, was named by Vosges, of Buenos Aires, in 1901, shortly after its discovery.

The form and appearance of the trypanosomes are as follows:—The body is elongated, and usually blunt at one end with a flagellum at the other. Centrally there is a round or oval body, the nucleus proper. Behind this, and usually very close to the posterior end of the body, is a very much smaller body, the centrosome, blepharoplast, or kinetonucleus. From this centrosome arises the flagellum which runs to the surface, emerges, and passing forward forms the border of the undulating membrane. This flagellum is longer than the undulating membrane, displaying a free portion which is usually as long as the entire body. The end from which the flagellum protrudes is regarded as the anterior.

Trypanosomes are parasites of vertebrates ranging from fishes to man. They are confined to the blood, lymph, or cerebro-spinal fluid, and therefore, with one exception, the intervention of an intermediate host is necessary for their transfer. In the case of certain of the mammalian trypanosomes the carrier is known to be a fly. The transfer of trypanosomes by the invertebrate host is effected in two ways, the indirect or biological and the direct or mechanical. The former is wholly analogous to what takes place in the transmission of malaria by mosquitoes. The fly bites an animal suffering from the disease, taking up a number of trypanosomes with the blood. These are not digested by the fly, but go through certain biological processes, and may even apparently disappear as trypanosomes. At all events the fly, after the first few hours, generally ceases to be infective, and remains non-infective for several days. After this lapse of time, however, the trypanosomes within the fly resume their ability to infect any host which the fly may bite. Moreover, flies which have thus become infective remain so, so far as is known, for the rest of their lives, the trypanosomes continually multiplying within them. In the experimental work so far done, however, only a small proportion of flies—from 5 to 20 per cent. acquire this permanent infection, although in nature it is believed the percentage is much higher.

The second method of transfer is the direct or mechanical. If a fly bites a sick animal, and very shortly afterwards a healthy one, the latter may contract the disease. This is due to the fact that as a result of the first bite the proboscis of the fly becomes charged

with trypanosomes, and these are deposited in the wound made when the fly bites for the second time.

The experiment has been tried of allowing a fly to bite a sick animal, and then successively, two healthy ones. It has been proved that the first healthy animal to be bitten by the fly usually contracted the disease, whereas the second one did not. In other words, the fly cleaned its proboscis while biting the first of the two healthy animals. The ability to infect by the direct method is usually lost at the end of a few hours, but may be maintained for as long as two or three days.

In the transfer of an organism by the indirect method, while there may be more than one insect host, these, in the known cases, are closely allied species. In direct transmission it apparently makes but little difference what species of the biting fly is involved, the essential condition being that the interval between the bites of a sick to a healthy animal be only a matter of a few hours. The fly merely acts as a scalpel or hypodermic needle. Indeed, it has been found that the house fly, which cannot bite at all, can transfer *Mal de caderas, surra, and other trypanosome diseases by merely sucking alternately a raw surface on a sick and healthy animal.*

Knowledge as to what takes place with the trypanosome in the intermediate host is meagre up to date. According to Lacerda, Mal de caderas was imported into the island of Marajo, from there it spread as far as the State of Matto Grosso. This much is certain, that since 1860, caderas has caused such ravages in this particular State that horses and mules have all disappeared, and the natives are obliged to use cattle as draught animals, and even for riding purposes, young bulls are trained. At the present time the disease has greatly extended; it occurs in Brazil and Bolivia, throughout Paraguay, in the Argentine territories of the Chaco, Formosa, and Misioner, also the Argentine provinces of Corrientes, Santiago del Estero, and Catamarca. The epizootic is most prevalent in the marshy districts, and during the months that it rains least.

Animals susceptible. Caderas occurs naturally almost exclusively amongst horses, but by inoculation can be given to a large number of other mammals.

Let us first study the disease in the horse and mule, since it is essentially a disease of the equidæ, and in them may give rise to very serious epidemics.

We have already seen that in certain parts of South America it is so difficult to keep horses and mules alive that cattle have to be used for riding purposes. Vosges mentions the case of a cavalry regiment which in June received 600 horses, of which only 100 were alive in the following November. Mules and donkeys, especially the latter, are more resistant than horses.

Symptoms.

1. The first sign of the disease in horses and mules is lachrymation—or tears from corner of the eyes running down the face; this at first is slight, but in a great number of cases increases in amount until it becomes profuse. There also appears at the inner canthus a semi-gelatinous secretion.

2. Petechiæ or ecchymosis of the mucous membranes, chiefly those of the membrana nictitans, which is of a claret colour, ranging from 1-16th to ¼ of an inch, there may only be one or several, and, as the disease progresses they increase in size, and coalesce. To observe these changes the lids of the eye must be everted. (*This is very characteristic in the early stages*).

3. Irregular fever, temperature 104° F. to 107° F., which only lasts for very short periods, during which the trypanosomes can be usually found if smears of blood are taken upon glass slides.

4. Urine voided tinged with blood in great number of cases, more so in the females of the present epidemic. All authorities on this disease agree in stating that the organisms are not found in the urine, even when animal is affected with hæmaturia.

5. Penis of male projected from sheath for about six or eight inches, with slight erection, and the organ bent either to one side or the other; this condition is continuous in animals thus affected.

6. The skin, particularly of the neck and shoulder is often the seat of slight weeping eruptions; the patches, which are 1 to 1½ inches in diameter, are covered with small scabs, and the hair falls out in those places. It is probably due to the presence of these patches that, upon all the estates where the epidemic has fallen, there has been an increase to an enormous extent of collar galls and harness sores in spite of extra precautions to prevent it, and the mules doing less than their usual work.

7. Paresis or loss of power to control the hind limbs in the later stages is characteristic; although microscopical examination of the blood at this time fails to reveal the presence of the organism, but if injected into susceptible animals, a typical infection results. The disease is almost always fatal to horses, it lasts from two to five months in the horse; six to twelve months in mules and asses. There is rapidly advancing anæmia, emaciation, and great debility, although in the great majority of cases the appetite remains good throughout, no matter how high the fever may be. There is extreme pallor of the visible mucous membranes, followed a little later by a yellow tinge. From first to last there is a progressive wasting.

8. The severity and course of the disease depend a good deal upon the age and breed of the animal; for example, young mules that appear to have taken more to the equine side of their breeding are less resistant to the disease than adult healthy mules of common breed.

Mode of Propagation.

Mal de caderas can be very easily inoculated, a very small dose being sufficient, or to place traces of the virus upon the surface of a wound or excoriation. The The ingestion of blood or an emulsion of an organ containing trypanosomes is not followed by infection, if there be no recent wound or abrasion of the mucous surfaces. Sexual intercourse does not give rise to infection, as in the case of dourine or mal du coit, and allied trypanosome disease of horses.

One would naturally imagine that caderas was spread by means of biting flies, as in the case of surra and nagana. This opinion has been held by nearly all observers, but is still denied by some, and it is not in agreement with the number of recorded facts as to the conditions under which caderas is propagated. Personally I believe the stomoxys calcitrans which is so prevalent in every stable, pen, or byre in the colony, is the chief means of the spread of the present epidemic.

Lignières states an epizootic of Mal de caderas which occurred on a farm in Paraguay, did not spread to a neighbouring farm, which was separated from the former only by a wire gauze partition.

The only fact upon which all observers are agreed is that the capybara (Hydrochœrus capybara) or caprincho which is very abundant in Paraguay and in the Argentine portion of the Chaco, along the banks of the small watercourses running through the cattle-rearing districts is the source from which the flies or other carriers of the disease probably obtain the virus. These animals are attacked periodically by an epizootic of an unknown nature; they lie about along the banks of the streams and die there. When the farmers in Paraguay find the dead bodies of capybara on their farms, they know that mal de caderas will soon break out among the horses. There is a striking analogy between this mortality among the capybaras which precedes outbreaks

of caderas, and that among rats which precedes epidemics of plague. (Capybaras are, I understand, the water rats of this colony).

PROPHYLAXIS AND TREATMENT.

Veterinary surgeons, estate managers, and horse proprietors should see that all animals are daily dressed with the following, in the morning for preference, with a view of keeping their animals free from the various flies, and thus to some extent preventing the animal from becoming infected: Kerosine 1 gallon, water 2 gallons, soap (soft or hard) 1 lb. Dissolve the soap in the water and add with continual stirring whilst water is boiling the kerosine, allow to cool, and then brush into coat of animal with body or dandy brush. Quinine, methylene blue, salicylicacid, carbolic acid, permanganate of potash, boracic acid, also intravenous injections of perchloride of mercury have all been tried in the treatment of this disease. As with nagana and surra, arsenious acid has given favourable results in some cases, but the improvement has only been temporary. Nuclein gave excellent results for a time, but later did not appear to exert any beneficial effect on the diseased animals. Salvarsan (606) proved useless, the animals upon whom it was tried quickly succumbed. Intravenous injections are being made upon some 30 animals, but at this stage it is too early to be able to offer any opinion either for or against the treatment to which they are being subjected. At a later date I hope to be in a position to offer some further information on the subject.

In animals found to be affected with the disease, before they have become very low in condition, I have had most excellent results by the administration morning and night of a mixture of pot. iodide and hydrarg. biniod, particulars as to doses, etc., I shall be most pleased to forward to any qualified brother practitioner; the animal while undergoing the treatment must be relieved from work of any kind, neither riding or hauling being permissable, as the animals appear to be unfit to cope with the disease and work at the same time.

ABSTRACTS FROM FOREIGN JOURNALS.

EPITHELIOMA OF THE JAWS IN THE HORSE.

Roquet, in an anatomo-clinical review (*Revue Générale de Méd. Vét.*) of this condition, says that it is one of the most malignant forms of cancer. It is found in adult or old horses. Generally it is situated upon the upper jaw; sometimes, but more rarely, upon the lower.

Among the symptoms are painful mastication, difficult deglutition, and a discharge of fetid saliva. The cancer is seen in the mouth, most frequently in the region of the fourth and fifth molars, in the form of fungoid friable granulations, which bleed easily. The teeth are deviated, loose, and sometimes detached. There may be invasion of the palate, nasal cavities, sinuses, and even of the skin of the forehead, with deformation of the head, a purulent fetid catarrh, and frequent nasal and buccal hæmorrhages.

The submaxillary and retro-pharyngeal lymphatic glands are invaded by cancerous adenites. The development of the epithelioma may also extend to the pharynx, soft palate, tongue, orbit, meninges, etc. The general condition rapidly becomes altered.

Histologically, the cancer appears as a squamous-celled epithelioma, usually having its origin in the gingival epithelium. More rarely it is a paradental epithelioma, originating at the expense of cellular accumulations which have remained unused in the formation of the teeth.

Epitheliomata of the jaws are distinguished from sarcomata by microscopical examination. Sarcomata are less frequent than epitheliomata, are found at all ages, and only exceptionally become generalised to adjacent organs.

Epitheliomata, on the other hand, are *very soon* accompanied by metastatic developments in the lymphatic glands. Their evolution is very rapid, and in two, three, or four months, the local lesions are very serious.

There is no effective treatment. The free excision of the lesions is inefficacious, as recurrences follow it.—(*Annales de Méd. Vét.*)

MANUAL TREATMENT OF THE BOVINE OVARY IN STERILITY.

Gebauer, an official veterinary surgeon of Dippoldiswalde, has published (*Deutsche Tier. Woch.*) an article upon this operation. The enucleation of the persistent and hypertrophied corpus luteum in the treatment of sterility was recommended by Hess and Zschokke in 1906, but Gebauer thinks, from the small number of reports upon it that have appeared in the professional press, that it is little practised by German veterinarians. Nevertheless, from the ease of its performance, and the successful results that have been attained by it, he thinks that it must ultimately be adopted by every practical veterinary surgeon.

Gebauer has performed the operation some hundreds of times upon cattle. From his experience he concludes that an examination of the ovaries by palpating them through the walls of the rectum should be undertaken upon every heifer which, after reaching the age of two years, still shows no signs of going to the bull. In farms on which cows are failing to conceive, the examination should be made upon each animal eight weeks after bulling, whether she has again come into use or not. Finally, the examination should be made upon every cow which, about eight weeks after calving, has not yet come into use for the bull.

The examination should be made by the rectum, and with one arm only. The ovary is palpated with the finger-tips, and *is not drawn backwards* while this is being done, but is allowed to remain in position. If a persistent and hypertrophied corpus luteum or an ovarian cyst exists in an ovary, an elevation is then distinctly perceptible to palpation. The ovary is then taken in the hollow hand in such a way that the corpus luteum to be removed or the ovarian cyst is placed against the thumb. The ovary is brought against the thumb by gentle pressure from all four fingers, so that the place to be operated upon can be felt distinctly. The cyst is broken, or the corpus luteum pressed out, by pressure of the thumb against the index finger. Even moderate pressure causes the extrusion of the projecting corpus luteum.

When the operation is performed with one arm, there is no great danger of tearing away of the ovary. Nevertheless, the waves of rectal peristalsis, which set in at intervals of from 30 to 50 seconds, must be guarded against, and in that event the ovary must be released, even without completion of the operation, and then be searched for anew.

After extrusion of the corpus luteum, Gebauer advises compression of the ovary for about half a minute. After-hæmorrhages are rare. Gebauer has only observed two cases of protracted bleeding, both of which were successfully treated by the injection of ergotin.—(*Berliner Tier. Woch*).

The Demonstration of the Negri Corpuscles, and the Differences between them and Sinigaglia's Corpuscles.

Lina Negri Luzzani has published *(Annales de l'Institut Pasteur)* an article upon this subject. Numerous methods of examining the nervous system of animals suspected of rabies for the discovery of Negri's bodies have been described, and the author recommends the following procedure.

1. Gently scrape the surface of the hippocampus, or, in default of that, the cerebral or cerebellar cortex or the grey portion of the spinal ganglia.

Disassociate the scraping upon a slide in a dilute solution of acetic acid. Numerous isolated nervous cells are thus obtained, in which it is easy to recognise Negri's bodies.

2. If this examination of the fresh tissues gives no result, small fragments of the same tissues are fixed for two to four hours in Zenker's solution (Potassium bichromate 2½ parts, corrosive sublimate 5 parts, water 100 parts, and acetic acid 5 parts). They are then washed for some minutes in water, and teased out upon a slide. The discovery of Negri's bodies is more easy in tissues treated in this manner than in fresh tissues.

3. When necessary (which very rarely happens) sections are cut, and stained by the rather complicated technique of Mann.

Negri's corpuscles are only visible after a sufficiently long period of incubation. Their appearance coincides with that of the first symptoms of the disease. They resist putrefaction, and are preserved in glycerine. In cases of furious rabies, they are found especially in Ammon's horn.

Sinigaglia has described bodies resembling Negri's corpuscles in the cells of the conjunctiva, bronchial epithelium, and nervous centres of dogs suffering from distemper. The distemper is localised in the regions in which these corpuscles of Sinigaglia are found. Negri's corpuscles can be differentiated from Sinigaglia's by the following characters.

Negri's bodies are distinct and regular in outline. The outline of Sininagaglia's bodies is distinct, but is irregular, undulating, and sometimes tortuous.

Negri's bodies contain internal formations which are well individualised, unequal, and often budding. Sinigaglia's bodies contain internal formations which are smaller than those found in Negri's bodies, are equal, and have a granular appearance *en masse*.

Each cell contains one or several of Negri's bodies. The number of cells containing Sinigaglia's bodies is very small.

The author, from numerous examinations, is convinced that to examine for Negri bodies is a reliable method in the diagnosis of rabies.—(*Annales de Méd. Vét.*)

Magnesium Sulphate as an Antidote to Arsenical Poisoning.

D. Sieber states (*Bulletin de Sciences Pharmacologiques*) that a hypodermic injection of magnesium sulphate, in a dose representing half a gramme of the drug per kilogramme of the animal's body-weight (roughly 7·7 grains to 2·2 lbs.) is capable of saving a rabbit which has received an ordinary lethal dose of arsenic by the mouth or under the skin, but not if the arsenic has been given intravenously. The magnesium sulphate therefore only acts as an antidote to arsenic so far as the latter drug has not yet invaded the circulation.

The author's view of the mechanism of the antidotal action of magnesium sulphate is that it consists in a retardation of absorption by the formation of a chemical combination which is deficient in solubility.—(*Annales de Méd. Vét.*)

W. R. C.

CENTRAL CANADA VETERINARY ASSOCIATION.

The eleventh annual meeting was held in the Board of Trade Building, Ottawa, on Jan. 23rd. Meeting called to order by the President at 7.30 p.m. for business and papers. About 35 members were present.

Under the heading of new business it was moved and carried that the sum of five guineas be forwarded from this Association to the Hon. Sec. and Treasurer of the Hunting Memorial Fund, London, England, to assist in affording a suitable recognition of the life work of the late Mr. William Hunting.

An authorised schedule of fees was approved and instructions given to the Secretary to have a certain number printed, as follows :—

First visit in City or Corporation	dols.	2.00
Subsequent visits to same case		1.00
Dentistry : Dressing or floating teeth at Infirmary		1.00
Extraction of molar teeth	from	3.00
Cutting of molar teeth	„	3.00
Parturient apoplexy	„	5.00
Castration of colts	„	3.00
Parturition	„	5.00
Removal of retained placenta	„	3.00
Prolapsus uteri	„	5.00
Anæsthetics—horses and cows	„	5 00
Visits : First five miles outside town or city limits	per mile	1.00
Each subsequent mile		.50
Examination for soundness with certificate, from		3.00
Double fees and mileage charged for calls from 7 p.m. to 7 a.m.		
Detention fees :		
During day, after first hour	per hour	1.00
During night, after first hour	„	1.50
Consultations	from	3.00
Consultations at surgery	„	1.00

Papers read and discussed occupied considerable time.

The paper on Contagious Abortion was received with interest. This paper dealt with the isolation of Bang's bacillus and the presence of the organism in the dairy milk. This paper was read by Mr. Charles Evans, Department of Agriculture.

The most important paper on Surgery was one by Mr. Geo. Hilton on "The Operation for double Scrotal Hernia in the Horse."

The meeting further instructed the Secretary to frame up a resolution from this meeting to the Hon. the Minister of Agriculture urging the Government to take steps towards forming regulations for the control of bovine tuberculosis.

Officers elected for the ensuing year were as follows :

Hon. President.—Dr. Fred Torrance, The Veterinary Director-General.

President.—Mr. Geo. Hilton.

Vice-president.—Mr. R. T. O'Hara.

Hon. Secretary-Treasurer.—Mr. T. C. Evans.

Executive Council.—Messrs. W. G. Austin, A. E. James, J. B. Hollingsworth, H. D. Sparks, and W. C. McGuire.

Auditors.—Messrs. A. W. Harris and Young.

CHARLES EVANS, Hon. Sec.-Treas.

8 Hartington Place,
Ottawa, Canada.

THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

The annual meeting was held at the Grand Hotel, Manchester, on Thursday, 5th March, at 4.30 p.m. The President, W. A. Taylor, Esq., Manchester, in the chair. There were also present Messrs. Wolstenholme, Sumner, Stent, Munro, Lindsay, Spreull, Pillers, Hopkin, McKinna, Clarkson, and G. H. Locke, hon. sec.

Apologies for absence were received from Messrs. Carter, Shinley, J. H. Wright, Trigger, Elam, Abson, Dawes, Packman, Jackson Young, Woods, J. S. Lloyd, Wharam, and A. W. Mason.

The minutes of the last annual meeting having been published, were taken as read. Proposed by Mr. Stent, seconded by Mr. Sumner.

PRESIDENT'S ADDRESS.

The PRESIDENT, in his address, said : It is with great pleasure that I rise to address you, in accordance with Rule 4, at the annual meeting of this most useful Association. I do not intend to do more than reiterate the remarks that I made at the last annual meeting. You will remember the matters alluded to on that occasion, which have been issued in pamphlet form and circulated to all the members of the Society, and also to every member of the veterinary profession.

So far as the Defence Branch of the Society is concerned, I think only two cases have had to be considered by the Council, and one at present is still under consideration.

The Benevolent Branch is something like the poor, always with us, and there is constant disbursement of our funds taking place throughout the year. I think we are at the present time expending all that we are empowered by the rules to dispose of, at least there or thereabouts.

I am informed by our worthy Secretary that the membership stands somewhat better than last year, but it is not for me to trench upon his report.

I cannot understand why more members of the profession do not join this Society, and I think it is a matter of amazement to the Council of this Society. Of all the Associations that exist in connection with our profession I look upon this Society, in the case of a young man starting a practice, as the most valuable one he could join. If he could not afford to join any other Association he should join this one. It is useful not only in connection with cases taken into the law courts, but in other cases where threatened action calls for prompt procedure. I have heard of men subscribing to ordinary insurance societies to cover their liabilities, but how much better would it be to come to a Society like this where they can have the benefit of the experience and the assistance of the officers and the Council.

I do not intend to occupy your time further, and will ask the Secretary to give you his report.

HON. SECRETARY'S REPORT.

Mr. LOCKE reported as follows: I am pleased to say the Society is still progressing, but rather slowly. We had at the end of the year 275 members, there were 15 new members and seven resignations. This year, since January, six new members have joined. Three members have died this year.

We have now about 10 recipients of our benevolence, and two grants of money were made. We have lost three good friends by the death of Mr. Faulkner and Mr. Hunting, and through the resignation, on account of ill-health, of Mr. Butters. Their places on the Council require to be filled.

There has been a change in the trusteeship, and in place of Mr. Faulkner, Mr. Packman, of Bury, has been appointed. There are two changes in the Life Governors of the Benevolent Branch. The Midland Society have adopted Mr. Dawes, and I have been adopted to represent the Lancashire Society.

Two donations were received, one of £5 5s. and another of £2 2s.

In the Defence section we have had two cases, one of which was won at a cost of £15 16s. 3d., and the other is in abeyance.

TREASURER'S REPORT.

Mr. WOLSTENHOLME said the balance sheet had been printed and distributed to every member. It speaks for itself.

In interest alone, *plus* the donation of Mr. Sewell, we have received £196 12s. 3d., sufficient for all purposes without touching capital, which is excellent. We have disbursed £162 12s. I am sorry to say there is a sum of £29 8s. owing from members in arrear with subscriptions, some members being as much as five years behind. I think their names should be deleted from our list.

Mr. HOPKIN, in opening a discussion, referred to the President's remark—that in the Benevolent Branch the expenditure had nearly reached the limit, but so far as he (Mr. Hopkin) remembered, they were not bound to a specified amount

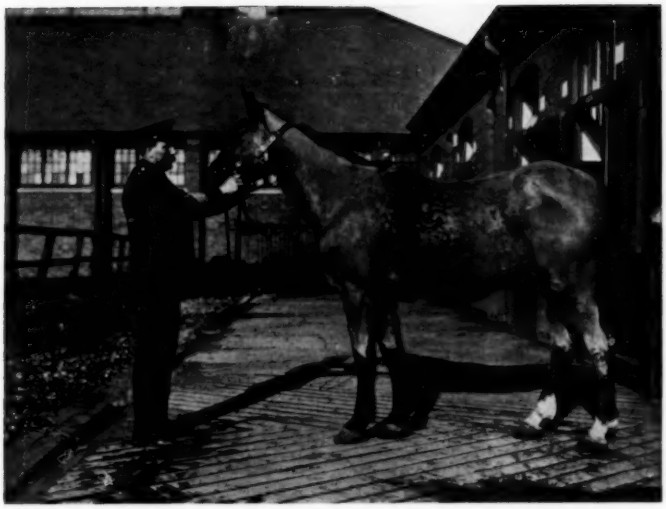
Mr. WOLSTENHOLME replied that only the interest from the money invested by the Benevolent Fund could be expended.

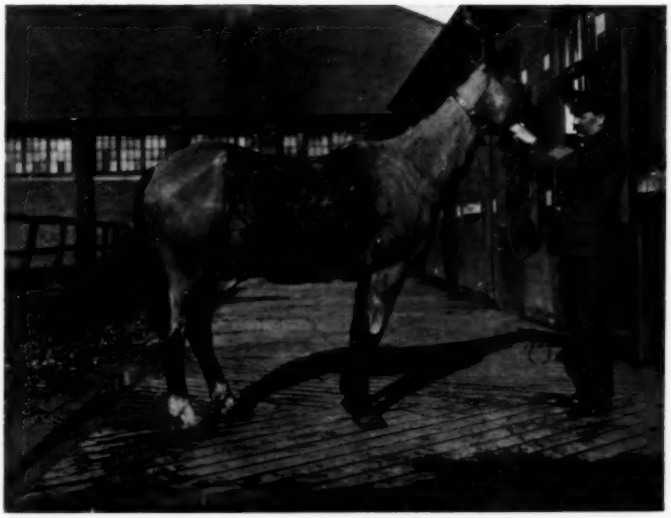
Mr. LOCKE read Rule 10 as follows :—"The present capital of the Fund, and all monies received whether donations, subscriptions, or legacies, shall be invested, and only the interest or usufruct, or a part thereof, which may be received therefrom, is to be expended."

Mr. HOPKIN asked whether any surplus in the amount expended out of the interest in one year could be expended in the following year.

Mr. WOLSTENHOLME replied in the negative, and said unused interest in any year passed into the capital account.

Mr. CLARKSON thought it a pity that these balances should have to be re-invested, and the rule should be altered. According to the present rule there is nothing in hand to spend at the beginning of a year.





ALOPECIA TOXICA.

To illustrate note by Capt. J. R. Hodgkins, F.R.C.V.S., A.V.C.

UNIVERSITY OF ALBERTA LIBRARY

The TREASURER said there was always loose money in the bank in the name of the Benevolent Fund which could be used.

Mr. HOPKIN considered that times had changed so much, the Society was prosperous, and more money should be disbursed; and after further discussion he gave notice that he would propose an alteration to Rule 10.

Mr. MCKINNA moved a vote of thanks to the retiring officers, especially mentioning the President, Secretary, and Treasurer. He echoed the words of the President in saying it was lamentable that out of three or four thousand members of the profession only about 274 avail themselves of the benefits of this Society. The first thing he did was to join, and although he had never had to claim its help he felt that he was doing something towards the benevolent branch.

Mr. LINDSAY seconded, and it was heartily carried.

The PRESIDENT thanked the proposer and seconder on behalf of his co-labourers and himself. When coming to the meeting he asked himself which member of the executive, excluding himself, had the hardest work, and said it lay between the Secretary and Treasurer. He came to the conclusion that during the past year it was the Treasurer. The trio had, however, pulled together and worked as one man.

The PRESIDENT then vacated the chair.

Mr. HOPKIN, in proposing that Mr. TAYLOR be re-elected President, said he remembered many years ago proposing Mr. Taylor's father for the same position, which he occupied to the close of his life. The son had done the work so ably, and followed in the footsteps of his father; he possessed the attributes necessary for the position, and had the interests of the profession at heart that they could do no other than ask him to again resume his position in the chair.

Mr. MCKINNA expressed great pleasure in seconding.

Mr. TAYLOR again took the chair, and said that so long as he had the power, his services would be at the disposal of the Association.

Vice-President. Mr. WOODS was proposed for re-election by Mr. Sumner, seconded by Mr. Wolstenholme. Carried.

Council. Mr. NOËL PILLERS moved that the Council be re-elected with the substitution of the names of Mr. Lindsay, Dumfries, and Mr. Slocock, Hounslow, for those of Mr. Faulkner, deceased, and Mr. Butters resigned. Mr. Spreull seconded. Carried.

Mr. LINDSAY was gratified with his election, and said he would endeavour to further the interests of the Association to the best of his ability.

Treasurer. Before being re-elected, on the proposal of Mr. Hopkin, seconded by Mr. Munro, Mr. Wolstenholme desired the meeting to know that at the end of this year he felt that he would have to relinquish the post. When first elected it was a revelation to come into close contact with the brave hearted founders of the Society.

Hon. Secretary. Mr. Sumner said there could be little difficulty in selecting the man for this post. They knew the breed of Mr. Locke, and his capacity for the work. This had always given entire satisfaction. He proposed Mr. Locke. Mr. Lindsay seconded. Carried.

Auditors. Mr. J. H. Wright, M.R.C.V.S., Manchester, and Messrs. Litton, Pownall and Co., were re-elected on the proposition of Mr. Stent, seconded by Mr. Clarkson.

The question of the action to be taken in regard to members in arrear was discussed. Mr. McKinna proposed that a registered letter be sent to those members whose subscriptions are over two years in arrear, drawing their attention to rule 2. Mr. Hopkins seconded, and it was approved.

WILLIAM HUNTING MEMORIAL.

The PRESIDENT: You are all cognisant of the fact that most of the veterinary societies have been approached by those responsible for getting up a memorial to the late Mr. William Hunting. Mr. Hunting was a member of this Society, and a man whose loss the members most deeply deplore. During his lifetime no action was taken by Government to indicate the esteem in which he was held by the members of our profession and which some of us thought he richly deserved. No recognition of a public nature was taken with regard to Mr. Hunting's indefatigable work in connection with public health, sanitation, and other matters relating to some of the diseases communicable from animals to man. The question is whether our Society in reply to the application can take action in the matter in the way of making a presentation to the Memorial Fund. Personally, I can find no rule which will empower us to do so. This Society was formed for the defence of veterinary surgeons in case of unjust claims and actions at law which might be brought against any of its members. It was also framed for benevolent purposes, and we can hardly look upon a public memorial though it be a professional one as a fit object upon which to expend the funds of our Society. The memorial is not taking the nature of a charitable investment, otherwise probably our Society might be within its rights in allocating a subscription to the fund. [No action was taken in the matter].

It was resolved that a report of the annual meeting be printed and sent to each member of the Society.

The meeting closed with a vote of thanks to the President.

G. H. LOCKE, Hon. Sec.

The Relation between the Bovinoid Tubercle Bacilli found in Man and True Bovine Tubercle Bacilli.

Mr. Walter H. Fearis, Department of Bacteriology, King's College, writing to *The British Medical Journal*, says:—"In the first place, it must be noted that although some investigators—for example, the British Royal Commission, Frazer, Philp Mitchell, Raw, Weber—have found bacilli of bovine type in tuberculous children, such evidence is no proof that the children were infected by tuberculous cattle: the source of infection may have been other human beings infected with tubercle bacilli of a similar bovine type. Working quite independently of the writer, Ralph Vincent also has arrived at this conclusion.

Secondly, it has not yet been proved how many—if any at all—of the tubercle bacilli of bovine type found in the tuberculous children were really identical with the true bovine tubercle bacilli of cattle. It must be remembered that, up to the present, the assumption of this identity has been based on evidence obtained by very careful cultural observations, and the study of the pathogenic effects produced by each of the two kinds of bacilli *on animals alone* but not on man. All the reliable evidence so far obtained from observations of the effects of the bacilli *on man* strongly suggests that the true bovine tubercle bacillus is not strictly identical with the bacillus of bovine type found in tuberculous human beings. Thus, by inoculations made on himself, Carl Spengler demonstrated that whereas the true bovine bacilli are relatively harmless to man, on the other hand, the bacilli of bovine type found in human beings are exceedingly virulent and capable of causing extremely severe toxic symptoms—indeed, the latter type nearly caused death. Spengler's observations are confirmed by similar investigations made by v. Baum-

garten and Klemperer, who likewise demonstrated the relative harmlessness of the true bovine tubercle bacillus to human beings; the investigations of the Italian and Japanese Governments carried out under the direction of Gosio and Kitasato, respectively, are additional confirmation; further important evidence which harmonises with Spengler's conclusions is to be found in the researches carried out by Koch, Kossel, Möllers, Weber, Emmett Holt (of New York), Ungermann, and Burnet, amongst many others.

Spengler has especially studied the tubercle bacillus of bovine type found in man; he calls this bacillus *Typus humano-longus*. Under certain conditions the virulence of *humano-longus* is greatly diminished; this would partly account for the mild course of the disease seen in so many cervical gland, bone and joint cases in children. Further, it is very probable that the true bovine bacillus plays an important part in immunising children against *humano-longus*, just as the virus of vaccinia immunises so well against variola. Indeed, from the results of his researches and other evidence, Spengler has advanced the hypothesis that the true bovine tubercle bacillus may be regarded as a jennerised *humano-longus*, the latter, by animal-passage on cattle, having lost its severe pathogenic action towards man, thereby becoming changed into the relatively harmless true bovine tubercle bacillus. In his admirable communication on the subject, Clive Riviere has also alluded to the probable immunising action of the true bovine bacillus on man under the ordinary conditions of life.

Since morphological and cultural tests, and animal investigations, do not appear to be capable of helping us to distinguish a relatively harmless true bovine bacillus from a *humano-longus* which is highly dangerous to man, therefore a laboratory method for distinguishing between the two is urgently needed.

Possibly, in the recent ultra-microscopic researches carried out by Spengler on the toxins of the tubercle bacilli, some solution of the problem may be found. In this communication only a few interesting points can be touched on concerning these investigations. Bouillon pure cultures of the tubercle bacilli to be tested are prepared. The emulsified surface-growth on each flask of bouillon is well shaken with the liquid in the flask, and, after standing, the contents are filtered. The filtrate —the "toxin"—is diluted to a strength of 1 in 10 with saline, and then examined in an ultra-microscope arranged for investigations on colloids. The following have been observed:

Type of Tubercle Bacillus from which the Toxin was Obtained.	Colour of the Cone of Light Observed in the Ultra-Microscope.
Typus humanus brevis, Koch.	Grass green.
Typus humano-longus, Spengler. (The tubercle bacillus of bovine type cultivated from human beings.)	Greenish-blue.
True bovine tubercle bacillus isolated from cattle.	Soft blue (N.B.—*No trace of green*).

In those toxins which I have examined there has been no difficulty in distinguishing between the soft blue light obtained with the toxin of true bovine bacilli and the distinctly greenish-blue light characteristic of the toxin of *humano-longus*.

Obviously, it is urgently necessary to repeat these observations, using tubercle bacilli of bovine type obtained from a very large number of tuberculous human beings resident in many different districts and countries.

Thus it will be seen that a great deal more work remains to be accomplished before we shall be in a position to state that the tubercle bacilli of bovine type found in tuberculous human beings have been communicated from tuberculous cattle to man. Some cases may be found to be due to cattle, but, in order to prove this, the necessary evidence must be obtained.

In the meantime it is extremely desirable that every effort should be made to ensure a clean and pure milk supply. Amongst others, Lord Rayleigh, Sir John Byers, and Mr. Robert Mond have shown how this can be accomplished in a practical manner."

Disputed Sale of a Hunter—Claim by a Veterinary Surgeon.

At York County Court on Tuesday, 10th inst., before his Honour Judge F. G. Templer, Alexander Farquharson Durkie, of Mill of Mains, Dundee, farmer, was the plaintiff in a case which had been remitted from the High Court. Plaintiff claimed the sum of £80, the price of a horse sold by him to Rowland Francis Meyrick and Eleanor Meyrick, of Hall Orchards, Wetherby, on May 23rd, 1913. There was a counter-claim for £12 17s. 6d., for the difference in the price realised for the sale of the horse, stabling, etc., and veterinary fee.

Mr. Harry Wray, of Hull, in opening the case, said that both parties had conferred and agreed that it was a case which should come before his Honour for trial, because of the convenience of the parties who had travelled from Dundee. York was the nearest point to the defendants' residence.

Plaintiff lived near Dundee and bred animals. He was not a professional horse dealer but a Justice of the Peace and a County Councillor. The horse in dispute was, in the first instance, described as sound and quiet. A letter of May 22nd by Mrs. Meyrick to the plaintiff said that her husband would buy the horse at £80, and he would be pleased to have it "vetted" first. That, he suggested, constituted a bargain. The horse was duly delivered to the defendant's home. When despatched it was in perfectly sound condition.

Mr. N. Crombie, of York, for the defendants, said his case was that the horse was not sound, and suffered from malformation of the hocks. It was represented as sound, and he therefore alleged breach of warranty.

Mrs. Meyrick stated that she arranged to purchase the animal from Mr. Durkie on the representation that it was clean, sound, and quiet. Immediately the horse arrived it was examined by a veterinary surgeon. Her husband did not like the animal, and it was returned as unsound and suffering from "curb" bone. The agreement when the horse was purchased was that it should be sound and quite fit for hunting purposes, for which it was required.

By Mr. Wray: Witness said she purchased the animal. Her husband was opposed to her buying the horse. Subsequently she wrote stating that her husband would buy the horse for £80, at the same time asking for it to be "vetted." She further asked if it was sound. She could not now state that when she first saw the horse it had two "curbs," but certainly there was one. Although at first she wrote stating that she was disgusted, she yet expressed her wish to see it again.

In answer to his Honour, Mr. Wray said his client did not sell the horse on a warranty.

Mrs. Meyrick's evidence was corroborated by three veterinary surgeons from Leeds, Messrs. G. E. Bowman, A. W. Mason, and Samuel Wharam; and by Mr. Meyrick, all of whom spoke to the animal having a

"curb" when seen and examined by them, and which, in their opinion, must have been of considerable standing, and could not have been "sprung" on the railway journey or whilst in Mrs. Meyrick's possession.

Plaintiff said he bred the horse in question; it was by Akbar, a super-premium horse. During the time the horse was in his possession it had never been treated for faulty hocks. He himself was a Member of the Royal College of Veterinary Surgeons, and had lectured at Aberdeen University. The animal was good when it left his place at Dundee, but when he saw it again at York, he was certain that it had been "treated." There was no malformation of either hocks. It had highly developed bones, which would give it more strength.

By Mr. Crombie: When he bought the horse back he found out the state of the hocks, and was certain it had been "treated." Mr. W. Hunting had not told him that the animal was unsound. Mr. Hunting had since died. "Sound and quiet" was a proper description of the animal. There were many forms of malformation.

Mr. Crombie: It is said that people breed for profit, but you say you do not.

Witness: Well, I do not.

Alexander Frederick Durkie, surveyor, son of the plaintiff, said he had ridden the horse in question. Witness knew the horse from birth. It had never had a "curb" whilst in his father's possession, and had never been blistered. The horse had always been healthy and had never been "sick or sorry" for one day. Witness travelled with the horse. It did not suffer from a "curb."

Andrew Spreull senior, partner of Messrs. Spreull and Sons, veterinary surgeons, stated that in May last he saw the horse in question. He submitted it to a very close and searching examination, and gave a certificate that it was perfectly sound. At that time there was not a "curb" on either hock, nor was there any sign of the hocks having been treated. At the time of his examination there was no fulness or malformation of the hocks. The bones were largely developed. Witness saw the horse after its re-sale, and the condition of the hocks then was due to it having been in the railway truck. The large bone of the hock had a tendency to strengthen the legs, rather than to weaken them. Witness asserted that in answer to a letter since the examination he stated that the hocks were sickle shaped.

John Duncan, coachman to Mrs. Ogilvie, sister to Mrs. Meyrick, said the horse was quite in good condition when he saw it in August.

Thomas Matthew Inglis, M.R.C.V.S., of Forfar, veterinary surgeon to the Board of Agriculture, said that on March 2nd last he examined the horse in question. He found both hocks sound. His opinion was that "once a curb always a curb." The bones were prominent, but this was not malformation. It was a common thing to be found in blood horses, and did not affect the soundness of the animal.

John James Ridley, M.R.C.V.S., veterinary surgeon to the East Riding Yeomanry, gave similar evidence to the last witness. He examined the horse on June 10th.

James G. Dean, M.R.C.V.S., Bishop Auckland, also gave similar evidence.

Mr. Harry Wray, in addressing His Honour, contended that the horse was fit and well when it was delivered. This was borne out by the certificate of soundness that was obtained prior to its despatch. He would not suggest for one moment that anything wrong had been wilfully done to the animal.

His Honour intimated that he did not wish to hear Mr. Crombie in reply.

JUDGMENT

His Honour, in giving his decision, said it was one of those cases in which there had been a misunderstanding between the parties, and one that it was very difficult to decide. It would have been better if Mr. Wray had had a jury. It was, he thought, unfortunate that the case should have been imposed upon him (the Judge). It should have been tried in Dundee. With respect to the witnesses on either side, he said there was a direct conflict of evidence. After carefully reviewing the evidence, he found for the defendant on the claim and on the counter claim, with special costs.—*The Yorkshire Herald.*

The Cambridge Field Laboratory.

Under the direction of several of the University professors a field laboratory has been started about a mile outside the town of Cambridge. It is arranged on entirely new lines, and is designed to bring together into close association the subjects of agriculture, biology, and pathology—or, in other words, veterinary science and medicine.

The work on tropical diseases has shown that certain of the larger animals act—as in the case of the big game in Africa—as reservoirs of poison. Veterinary science in the tropics has therefore become a part of medicine. even as medicine has become a part of veterinary science.

In this country we have such plagues as swine fever, foot-and-mouth disease, and redwater fever, all of which may have distinct bearing on human ailments; bovine tuberculosis, which in the view of many investigators does have such a bearing; typhus fever, which has been proved to be connected with body parasites; anthrax, actinomycosis, and some others.

In these circumstances the need for study along converging lines is obvious. At Cambridge every effort is made to keep the various departments in close touch. The farm is built round a central administration block of buildings, and though each department has a separate laboratory every facility is afforded for interchange of ideas. In the biological department some highly important investigations on tick-propagated diseases are being carried out by a very great authority on this subject which affects rabbits, cattle, and deer, and in Africa as East Coast Fever, which affects, amongst other animals, cattle, horses, and dogs.

There is a large collection of animals at the field hospital, including dogs, cows, a "salted" or infected horse from the Transvaal, and a jackal. It has been shown that the tick diseases of most animals are peculiar to them and cannot be transmitted from one species to another. It has also been demonstrated how enormous are the difficulties to be faced in preventing spread from infected to clean herds.

An illustration of the voracity of these insects is exhibited in a snake upon the neck of which a tick has fixed itself. Apart from the disease which they carry, the ticks may occur in such swarms that animals are bled to death by them—as occurred some years ago in a deer park in Cornwall.

The agricultural side of this work is being developed in connection with various dips which may be relied upon to kill the ticks. Dipping troughs are a feature of the farm, and experiments are at present being carried out with preparations of arsenic.

To a question, "Why do you work so much on diseases connected with hot climates?" one of the investigators replied, "Because we can get funds for tropical work. Money for home disease work is simply not forthcoming, and we have to be exceedingly careful, since these experiments cost a great deal."

Next to the biological section is the section devoted to pathology. Here a well-known investigator conducts a series of experiments on lupus, and has already succeeded in showing that when inoculated into animals

UMI

this disease produces a true tuberculosis. Lupus is often of bovine origin and may be caught from milk. Very strong evidence in favour of the idea that tuberculous milk is a highly dangerous commodity has been produced. Attempts are now being made to obtain a vaccine which shall confer immunity from the disease upon a number of monkeys.

Experiments are also being conducted upon the question of fecundity, and a South American drug, Yohimbin, is being extensively tested.

The field laboratory contains an operating theatre, where surgical operations are carried out upon some of the smaller animals, like dogs, goats, and calves. A beautifully-fitted post-mortem room completes the equipment of the farm.—*The Times.*

The Horse Owner and the Motor.

In a paper read by Mr. J. Gibbins at the annual meetings of the National Union of Horse and Vehicle Owners, and from which the following excerpts are taken, an attempt is made to forecast the immediate future of the question of the use of horse traction :—

"The profitable nature of a change from horse traffic to motor traffic depends upon the volume of horse traffic displaced, the relative cost of each, and the volume of traffic to be gained ; in other words, what work can be guaranteed your horses, what are the receipts per mile covered, what is the cost per mile, and what are the corresponding costs for motors.

It must always be borne in mind that the situation will probably change from time to time, and that the horseowner, who has also become a motor owner, may find that his former anticipations with regard to the maintenance of his horse traffic have been too optimistic.

In the paper I had the honour of reading before you two years ago at Manchester, one opinion I gave was that the horse had an advantage in cases where the work to be done consisted of a small mileage, or light loads, and lengthy periods of waiting. In so far as it affects the horse hire contractor, I consider that while the proposition is perfectly true to-day, a great change has occurred even during the last two years. There are several things which have operated in favour of the introduction of motor vehicles to replace horses, quite apart either from first cost or the cost of running and maintaining.

One is that a business man nowadays dislikes the term "old-fashioned." He believes, as he says, in going with the times. The more conservative of tradesmen hang back until they feel that they have to go with the swim, and, although perhaps with reluctance, the first experiment is taken simply because a competitor has already taken the plunge.

It is also a fact that the increased expenses thus incurred are often justified by an increase of trade secured by the quicker and more frequent deliveries, by the advertising value of the motor vehicle, and, what is perhaps of most importance, the much greater distance and area covered in one day.

The motor char-a-banc and motor cab introduced by a proprietor has the effect of causing his neighbour to think he is getting left behind. The result may be good or it may be bad for either or both. The new method will inevitably compete against the older, and when both horse vehicles and motor vehicles are run by one firm the proprietor must make up his mind, so far as his horses are concerned, to suffer the competition not only of his neighbouring motor proprietor, but also of himself. He must, therefore, like the tradesman, consider whether the new traffic he obtains from the employment of motors is enough to compensate him fo either the entire loss of his horse traffic receipts, or for the partial transfer of his own motor vehicles. He must also consider the percentage of costs compared with the receipts in each case.

Another branch of hiring also may be alluded to. Although motor funerals are not common occurrences, quite a considerable number of so-called motor hearses are now being employed both in London and the provinces. A motor conveyance to convey bodies long distances is an adjunct to the business of a funeral carriage master, possessing its advantages ; and if the use of it is confined to competing with the railway companies this innovation has not the fault of competing with the horse. But here, again, there is a strong probability that competition will step in against the horse-owner in time, and that a purely motor business will also seek to enter into this class of traffic, and not possessing the stock of horse vehicles will have no compunction in creating a fashion for the employment of motor laudaulettes to take the place of funeral broughams.

The problem of the horse supply is bound up with its profitable use, and it is undoubtedly a national problem, because of its use in agriculture, in the Army, and under many conditions in commerce. Being a national problem, it is necessary for unfair restrictions to be removed, and the incidence of taxation adjusted, so that the burden is lifted from the shoulders of the horse owners.

I have not touched upon the heavy horse traffic and its relation to motor developments. There has, however, been a rapid development during the last twelve months ; brewers, millers, furniture removers, and manufacturers of all kinds who formerly looked askance at the petrol or steam lorry, are now buying them freely, and the owners of heavy horses will know better than I do what effect this has had upon their business, and in what manner it is being met. It must not be forgotten that the success of the motor car during the last five years has been greatly accelerated by the great prosperity the country has enjoyed. Good judges are of the opinion that the tide of prosperity is receding. When the slump does occur, the receipts of the owners of motor vehicles will be materially affected, and the value and the economy of motors employed as a trade accessory will be considerably less on a reduced turnover. In the past the carriage master and the carting contractor have been among the first to feel the effects of bad trade, and the motor proprietor and motor builder will also come in to bear the first pinches of adversity.—*The World's Carriers.*

The Zigaya Sheep.

A bulletin from the International Institute of Agriculture describes the Zigaya sheep. The predominant breed for the production of wool in the south-east of Europe, and particularly in the Balkan countries, it is also bred for meat and milk. The wool of the thoroughbred is pure white, and at one time extensively exported to Western Europe. Pure breeding has been much neglected, and most of the wool is grey or streaked with black. At one of the State breeding establishments in Hungary the average live weight of rams two years old is 94¼ lb., of ewes in milk 77 lb. to 86 lb., old rams may reach 132 lb. to 143 lb., and old ewes 97 lb. to 110 lb. The rams are almost always horned, and the ewes hornless. This sheep has a small head, with a tapering muzzle, face and legs are usually covered with stiff black hairs. The horns of rams are ringed and curved in a spiral. Cross-breeding to improve wool or yield of milk or meat has been practised to a limited extent.—*Live Stock Journal.*

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Out-breaks (a)	Animals.	Out-breaks (a)	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.	(b)	Out-breaks (a)	Slaughtered. *
IRELAND. Week ended March 14	...	...	8	33	...	...	Outbreaks 1		11	3	16
Corresponding Week in 1913 ...	...	...	...	...	...	...	2		4	1	4
Corresponding Week in 1912 ...	...	...	...	...	...	...	1		14	5	41
Corresponding Week in 1911 ...	...	...	...	...	1	1	2		5	1	3
Total for 11 weeks, 1914 ...	...	...	36	452	...	...	26		239	47	284
Corresponding period in 1913 ...	...	...	...	...	...	...	68		188	37	188
Corresponding period in 1912 ...	1	1	...	...	...	...	25		195	35	286
Corresponding period in 1911 ...	3	3	...	...	1	1	27		183	31	586

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, March 16, 1914

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Edinburgh Milk Supply.

At the annual dinner of the Royal (Dick) Veterinary College held recently Professor Gofton, in proposing the toast of "The City of Edinburgh," referred to the question of tuberculosis and its treatment and preventions in the city. They knew, he said, that the city, so far as the treatment of tuberculosis in human beings was concerned, occupied the first place certainly in Great Britain. But there was another aspect of the tuberculosis question, in which the city was certainly behind the times. The attention of the city and its inhabitants must have been very strikingly drawn to the question of the prevention of tuberculosis from animal sources within the last few weeks by the publication in the daily Press of facts which were known to those, at all events, who had been in touch with the various workers some time before. It appeared that, roughly speaking, about 15 per cent. of their milk supply contained living tubercle, and that compared with other cities Edinburgh was twice as bad as the average of the cities in the United Kingdom. If that was the case, it indicated clearly that the city had room for advancement and progress. Edinburgh had been the first city in the United Kingdom to have a veterinary staff to carry out meat inspection, but it seemed to him that the city had not quite kept the pace in other respects in connection with tuberculosis.

Councillor Young, in reply, said the question of the milk supply and the question of meat inspection were under consideration at the present time by the Committee over which he presided. He had made inquiries as to the method of inspection adopted with regard to the milk which came into the city of Edinburgh. He was informed that periodically a large number of samples were taken of all the milk that was brought into the city, and carefully tested at the Usher Institute of Public Health. He saw Professor Hunter Stewart, the head of the Institute, who informed him that all the samples received up to date had given negative results, with some two exceptions. If the system of sampling was satisfactory, then we would be compelled to turn attention to the milk which was produced. There he found that all the cows in the city, some two thousand of them, were inspected by a veterinary inspector once in four weeks at the outside, and that the milk in Edinburgh ought to be as germ free as it was possible to be. But the milk which was sold in the shops was not as satisfactory as it ought to be, and the Public Health Committee were determined to find out how that could be remedied. The city of Edinburgh possessed certain powers which seemed to him quite unsatisfactory. If an inspector found a cow that he had reason to believe was tubercular, all he could do was to order the cow's removal, and the animal was traded off into some part of the country where veterinary inspection was not so close as in the large cities. It seemed to him that they not only wanted perhaps better administration in the city, but they wanted legislation to get at the root of the whole matter, and enable them to stamp out tuberculosis in cattle. That was one of the great tasks which lay before the veterinary profession.

Regeneration of the Testis.

Mr. C. J. BOND has recently published the results of some interesting experiments on the effects of orchectomy in birds (*Journ: Genetics*, 1913, iii, 131). In a paper which appeared in the *B. M. J.* July 21, 1906, Mr. Bond showed, among other results, that the removal of one ovary in the rabbit is followed by compensatory overgrowth of the remaining ovary. While investigating the question whether a similar compensatory hypertrophy occurred in the case of removal of one testis, the author was led to the interesting discovery that after apparently complete intracapsular removal of a testis, regeneration of the secreting tissue and tubuli seminiferi occurred *in situ*. It is of interest to note that this result only applies to birds, no evidence of any similar intracapsular regeneration having been obtained in mammals. Mr. Bond points out that "the domestic fowl has undergone a process of artificial selection in regard to the egg laying capacity of the female sex gland, and probably also in regard to the sperm-forming capacity of the male gland, hence it is of interest to find that the testis of the domestic fowl has great powers of structural and functional regeneration after partial removal, greater apparently than exists in mammals." It is naturally a point of great interest to determine whether, from the gametic standpoint, the regenerated sex gland differed from the previously existing structure. To test this Mr. Bond crossed the same female with a male before and after orchectomy. The experiment performed on fowls revealed no difference between the offspring before and after operation on the male parent. In the case of two experiments on pigeons some differences of a fairly definite character were noted.—*Brit: Med: Jrnl:*

Helminths and Cancer.

In a memoir recently published, Dr. Johannes Fibiger brings forward strong evidence in support of the view, by no means novel, that the lesions of the tissues produced by parasitic worms may act as the starting-point for the development of cancerous growths and tumours, the author found in wild rats a disease of the œsophagus and stomach characterised by an epithelial proliferation and inflammation leading, in pronounced cases, to a papillomatous growth which was the precursor of a malignant epithelioma. Examination of the primary lesions revealed the presence of a nematode worm, an undescribed species of spiroptera.

From a series of experiments it was concluded that cockroaches (Periplaneta americana and P. orientalis) serve as intermediate hosts for the spiroptera. The cockroach becomes infected by ingesting eggs of the worm which are passed out in the excrement of the rat; the eggs develop in the cockroach and the embryos of the worm become localised in the striated muscles of the prothorax and the legs. The rats become infected by eating cockroaches, and the embryos of the worm, set free from their cysts, attack the epithelium of the stomach, sometimes also that of the œsophagus or buccal cavity, and develop into the adult nematode, the cause of the lesions already mentioned. From his investigations the author concludes that all anatomical alterations are due to toxic products of the nematode. From the primary lesions caused by the nematode secondary metastases may be produced in other organs. The metastases contain neither the parasite nor their eggs. The development of the metastases is ascribed to the faculty of the epithelial cells to multiply in other organs independently of the parasite. The author thus confirms the view put forward by Borrel and others that nematodes may produce malignant tumours in rats and mice, and considers it not improbable that in human pathology also cancerous tumours may owe their origin in some cases to the presence of helminths.

Foot-and-Mouth—A Lesson from the Past.

A correspondent to *The Scotsman* writes :—

" In view of the present outbreaks of foot-and-mouth disease in England and Ireland, and the outcry in some quarters against the restrictions imposed, the recollections of an incident in a former outbreak in the "seventies" may not be out of place.

The gentleman who relates these particulars was at that time in charge of the sheep stock of an extensive holding in the South of Scotand, when the ewe stock numbered sixty-eight scores, and the lambing time had just commenced when the fell disease made its appearance. "It was," says this veteran, "the worst business I ever tackled. The ulcerated condition of the mouth and of the feet, led to many ewes going off their food, and off their feet, and lambs were unable to suck, partly because of the sores on their mouths, and partly because their dams refused to rise. Many of the ewes that were infected before lambing did not survive, but with very few exceptions those that had lambed before infection came safely through the trouble. The death-rate was very heavy, and when the flock was again sound there was found to be a shortage of nearly thirty score of lambs, and among the remainder were many that fell far below the usual quality and condition. In addition, quite a number of the ewes suffered constitutionally, so that they could not be retained in the flock, and had to be cast as shots."

Those who have not known such trials are apt to minimise the consequences of an outbreak, and are inclined to cry out against restrictions imposed with a view to preventing the spread of the disease. But surely it is infinitely better to suffer some little hardship and privation rather than run the risk of introducing such a disease at the present critical time when lambing is just commencing. In this instance surely the first loss is the least, and any slackening of the regulations can only be playing with fire.

Addresses Wanted.

The following list of names appears in the recently published Register of Veterinary Surgeons :—

Name.	Last address known.
Bell, E. W.,	53 Jeffreys Road, Clapham. S.W.
Blakely, John,	Elm Street, Rye, New York, U.S.A.
Blane, W. T.,	Castle Donington, near Derby.
Boase, J. T.,	Cotswold Chambers, Church Square, Cape Town, South Africa.
Cakebread, W.,	De Burgh House, Fairholt Road, Stamford Hill, N.
Dowdall, Arthur,	Stafford Street, Longton, Staffs.
Duff, James A.,	Glen Arthur, Duddingston, near Edinburgh.
Garrett, Richard,	Tubercurry, Co. Sligo.
Gorman, James,	24 Major Street, College, Toronto, Ontario, Canada.
Goundry, Charles,	G.V.S., Malmesbury, S. Africa.
Houston, David Spiers,	Westvale House, Port Glasgow.
Kelly, Vety.-Capt. Edward Harvey,	late A.V.D.
Ledger, Wm.,	Chicago, Illinois, U.S.A.
McLeod, J.,	Christchurch, New Zealand.
Macqueen, L. H.,	Watrous, Saskatchewan, Canada.
Magill, Jos. May,	Carpenterstown, Castleknock, Co. Dublin.
Meek, Ben. O.,	7 Bridge Street, Sydney, Australia.
Moir, Geo.,	G.V.S., Taiping, Perak, Federated Malay States.
Newbury, Thos. S.,	3 Palmerston St., Devonport.
Owen, G. E.,	c/o Department of Agriculture, Sydney, N.S.W., Australia.
Rix, C. E.,	7 Gubyon Avenue, Herne Hill, S.E.
Shacklock, J. Edward,	Castor, Alberta, Canada.
Smith, T. Assheton,	Kellerberrin. West Australia.
Welham, J. B.,	Sports Club, St. James Sq., W.

REVIEWS.

"The Chemistry of Cattle Feeding and Dairying." By J. Alan Murray, B.Sc. (Edin.), Lecturer in Agricultural Chemistry at University College, Reading. London: Longmans, Green & Co. 6s. net.

The first part of the book is composed of chapters on the "Constituents of Plants and Animals," in which the author sets forth the classification and composition of the various mineral and organic constituents connected with feeding. The chapters on fats, amides, and proteins will be appreciated. The chemistry of proteins is a subject in which the ordinary agricultural chemistry student is not, as a rule, well informed, and an intelligent reading of this chapter will form a solid basis for a future superstructure. Mr. Murray devotes two chapters to Statics and Dynamics, subjects, which in dealing with the requirements of animals, have not received due justice among scientists in this country. It has been left to Germany to devise the respiration chamber experiments, and much of the world's most valuable work of this character has been done in that country. The author demonstrates the theories on which such experiments are based, and though this is usually the physicist's domain, we agree that it is advisable to include it in the book for those who have not had the opportunity of obtaining such knowledge.

When these chapters have been fully read the student should be ready to recognise the advantage of having the tables on the thermic and dynamic values of various foods, and their approximate cost. The articles on the constituents required for the production of meat and milk are fundamentally the same as those of previous writers, but there is wisdom in separating the maintenance from the fattening rations. As the author points out in calculating these rations, the two should be kept quite separate, and not considered in combination, as in former calculations. A table giving the average composition and price of various foods which are most used by farmers is added. Part III. deals with feeding stuffs, their analyses, methods of compounding, and valuation. It deals connectedly with the different merits, and emphasises the value accruing from method. Part IV. deals with Dairying, and it is treated very fully. The author gives a very interesting chapter on "Chemical Constituents of Milk." The paragraphs on preservative methods should be useful to students. The chapter closes with an account of an "Infants' Bottle Milk," a preparation which is now sold as "Humanised Milk." The book closes with a chapter on milk products and their analyses. To students preparing for examinations in agricultural chemistry there is hardly a more suitable work on scientific feeding. To farmers, except those who either by college or self-training are able to adapt scientific knowledge to their own needs, the book is not to be recommended.

SPECIAL PATHOLOGY AND THERAPEUTICS OF THE DISEASES OF DOMESTIC ANIMALS.—By Dr. FRANZ HUTYRA, Professor of Infectious Diseases, and Dr. JOSEF MAREK, Professor of Special Pathology and Therapy, both of the Royal Veterinary College at Budapest. Authorised American Edition, from the third Revised and Enlarged German Edition. Edited by John R. Mohler, V.M.D., and Adolph Eichhorn, D.V.S., both of the U.S. Bureau of Animal Industry, Washington. Vol. II. Translated by Maximilian Herzog, M.D., Professor of Pathology and Bacteriology in the Chicago Veterinary College, A. Leslie Sheather, M.R.C.V.S. B.Sc. London, England, and G. Mayall, M.R.C.V.S., Bolton, England. With 163 illustrations in the text and 5 plates. Pp. xvij. + 1018. Royal 8vo. Price £1 11s. 6d. net. (Baillière, Tindall & Cox, 8 Henrietta Street, Covent Garden, London).

This second volume of Hutyra and Marek's great work is almost as lengthy as the first one, and will probably be even more valuable to English clinicians. It is devoted to the diseases of the respiratory organs, the digestive organs (including the liver, pancreas, and peritoneum, the central and peripheral nervous system, the organs of locomotion, and the skin). It thus embraces a greater number of the conditions usually seen in everyday practice here than the first volume, which was chiefly concerned with infectious diseases, many of them unknown in this country.

All that we said of the general excellence of the first volume, in reviewing it a few weeks ago, applies equally to this one. The same depth and comprehensiveness of view, combined with breadth and equality of treatment, mark both volumes. Naturally the whole is not all of equal merit, and if we were to choose the portions likely to be most valuable to English readers, we should name a good many of the short sections upon equine and bovine gastro-intestinal troubles, and the bulk of the two hundred and odd pages upon nervous diseases. Regarding the former, it is needless to say that Marek's stomach tube—an instrument scarcely known in this country except by hearsay—is fully figured and described, together with the method of using it.

Further, the general diagnosis of abdominal troubles, especially perhaps rectal diagnosis, and manipulative treatment by the rectum, have been more closely studied abroad than here, and this book contains the sum of Continental knowledge upon them. If its teachings are largely acted upon by our graduates, it may bring great changes into the treatment of the equine colics in this country. All that need be said of the pages upon nervous disease is that there are few important subjects regarding which practitioners generally stand in more need of accurate information, and the present account strikes us as on the whole the best and fullest we have seen.

The translation is good and clear, but the translators have introduced one or two words which we should be sorry to see established in our veterinary literature. For instance, such a word as "bloating," which is constantly used to signify emphysema and tympany alike, might surely be improved. On page 254 we notice a misprint—"sows" for "cows."

There are multitudinous points of interest in the book, and in many cases the views advanced are not in accord with English ones. For instance, in connection with obstruction of the œsophagus by a foreign body, we see no mention of the old English plan of small doses of oil *plus* patience, while some of the methods advised in its stead would strike many men as dangerous. Again, while Schmidt's milk fever treatment is recognised as valuable, it is suggested—not without reason—that its value may have been over-estimated. But the book covers so vast a field—including many little known as well as well-known conditions—that it cannot well be treated in detail, and it is best to summarise it by saying that it is a worthy successor to the first volume. Taking the two volumes as one work, we know of nothing in veterinary literature to compare with it for value. And, valuable as it is to the student, it should be even more so to the man in practice. W. R. C.

PARLIAMENTARY.

In the House of Commons on Thursday, March 24th Mr. CHARLES BATHURST, asked the President of the Board of Agriculture if there is any information available as to the possibility of preparing a diagnostic vaccine for Johne's disease from the causal bacillus, and whether he is aware that no public report has been issued upon this subject since September, 1912.

Mr. RUNCIMAN: The inquiry into Johne's disease, which is being conducted by the Royal Veterinary College, includes the question of diagnosis, and a large number of experiments and observations with regard to the relative reliability of different methods of diagnosis, including the use of "Johnin"—a test substance prepared from the causal bacillus—have been made. It is, however, considered advisable to obtain further evidence, and with this object "Johnin" is now being supplied gratis to veterinary surgeons for testing animals suspected of this disease. The College will publish a report on the subject as soon as the evidence collected appears to be sufficient to warrant definite conclusions.

March 19th.

FOOT-AND-MOUTH DISEASE.

In answer to Mr. C. BATHURST,

Mr. T. W. RUSSELL said:—The present position as regards foot-and-mouth disease in Ireland is as follows:—There were five fresh cases on Wednesday in scheduled districts in Cork—one in the city, one at Whitechurch, and three at Blarney. The disease does not appear to be active elsewhere. The real difficulty of the situation is in connection with consignments of calves that were sent from Cork to various places in the south. In five cases these animals were traced and disease found. In others the work of tracing is still going on in counties Waterford, Wexford, and Kilkenny,

but no outbreak has been reported. This difficult work has involved the scheduling of large areas of the country as a measure of precaution. But I trust the quest for these animals will soon be over and the country freed from the restrictions now imposed. In every case of disease it has been found to be connected with the cattle sale in Cork late in February.

Foot-and-Mouth Disease.

An outbreak of foot-and-mouth disease was confirmed on Thursday, March 19th, amongst cows on dairy premises in the Kirkdale district of Liverpool, and another outbreak was confirmed on Friday, the 20th, on similar premises in the Fairfield district of that city. Restrictions on the movement of animals have been in force in the city and surrounding district since the 23rd ultimo.

Another outbreak of foot-and-mouth disease was reported in Cork on Saturday, March 21st, within half a mile of the city.

The Board of Agriculture and Fisheries have been informed by the Department of Agriculture and Technical Instruction for Ireland of the issue by that Department on 25th inst of an Order, the effect of which is to prevent the movement of animals, by sea or by land, from the southern part of Ireland into the northern part of Ireland. The boundary line between these two areas is approximately represented by the line joining the following towns: Drogheda, Navan, Oldcastle, Finnea, Mullingar, Moate, Athlone, Ballinasloe, Athenry, and Oranmore. This Order will come into operation on 27th inst.

In consequence of this action, and in view of the general position as regards foot-and-mouth disease in Ireland, the Board have decided that they may now safely allow the importation of animals for slaughter from the northern area, and they have accordingly to-day made an Order authorising the landing of animals brought from the Irish ports of Dundalk, Belfast, Londonderry, and Sligo, to the authorised landing places at Birkenhead, Glasgow, and Manchester, where they will be required to be slaughtered within 96 hours after their landing. The Board's Order will take effect on Tuesday, 31st inst., and will thus permit of the shipment of animals from the northern area in Ireland on Monday night.

4 Whitehall Place, London, S.W.
March 26th.

Motor Taxes: Petrol Rebate.

In connection with Capt. A. C. Wilson's letter on this subject last week, we find that the matter has been mentioned in *The Veterinary Record* at the following pages:—

Vol. 21. May 8, 1909, p. 763: and pp. 772, 780, 793, 831, 845, 878-9.
Vol. 22. July 17, 1909. p. 68: and pp. 172, 248, 254.
Vol. 23. Sept. 24, 1910, p. 191: and pp 208, 237, 364, 392, 442, 446-7, 463, 513, 540, 629, 671, 722.
Vol. 24. Aug. 5, 1911, pp. 94-5.
Vol. 25. Sept. 7, 1912, pp. 134-5.
Vol. 26. Oct. 18, 1913, p. 260: and pp. 294, 340, 384, 461, 524, 624.

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks (a)	Animals.	Outbreaks (a)	Animals.	Outbreaks (b)	Animals.	Outbreaks (b)	Animals.	(b)	Outbreaks (a)	Slaughtered.*
GT. BRITAIN. Week ended March 21	19	20	2	9	2	4	47	65	8	78	633
Corresponding week in 1913 ...	11	14			1	3	67	120	3	34	371
Corresponding week in 1912 ...	24	25			6	11	67	180	6	67	694
Corresponding week in 1911 ...	14	17			2	3			5	61	630
Total for 12 weeks, 1914	228	243	11	74	25	67	915	1725	130	687	6149
Corresponding period in 1913 ...	158	175			36	111	942	2004	100	408	4762
Corresponding period in 1912 ...	304	334			42	93	1464	3438	140	724	8850
Corresponding period in 1911 ...	244	281	1	18	48	179			275	462	5213

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked: Durham 1, London 3.
Board of Agriculture and Fisheries, March 24, 1914

IRELAND. Week ended March 21	1	2	11	53	...	...	Outbreaks 2	37	4	6
Corresponding Week in 1913 ...	...	...	...	...	...	...	3	11	...	16
Corresponding Week in 1912 ...	...	...	...	...	...	...	2	6	9	40
Corresponding Week in 1911 ...	...	...	...	...	...	...	2	14	1	71
Total for 12 weeks, 1914 ...	1	2	47	505	...	...	28	276	51	290
Corresponding period in 1913 ...	...	...	...	...	...	...	71	199	37	204
Corresponding period in 1912 ...	1	1	...	...	...	...	27	201	44	336
Corresponding period in 1911 ...	3	3	...	...	1	1	29	197	32	657

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, March 23, 1914
NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Hunting Memorial Fund.

Subscriptions received up to 7 p.m., March 25th, 1914

	£	s.	d.
Amount previously acknowledged	266	6	6
Lieut. H. D. Lewis, A.V.C., Meerut, India		10	6
Eastern Counties V.M.S., per A. Holl, Esq., Hon. Sec. & Treas., New Buckenham	5	5	0
Mr. Thos. Russell Jarvie, Gateshead-on-Tyne	1	1	0
Central Canada V.S., per T. C. Evans, Esq., V.S. D.V.SC. (Tor.), Ottawa	5	5	0
Major A. Smith, I.C.V.S., Principal, Bengal Veterinary College	1	1	0
North Wales V.S. per Richard Jones, Esq., Towyn, Merionethshire	3	3	0
Mr. A. M. Howie, G.V.S., Umtata, S. Africa	1	1	0
	£283	13	0

HENRY GRAY, Hon. Sec. & Treas.
23 Upper Phillimore Place, London, W.

Cheques endorsed "Hunting Memorial Fund" and crossed "The London, City and Midland Bank, Ltd

CENTRAL CANADA VETERINARY ASSOCIATION.
(Established 1903).

8 Hartington Place, Ottawa, March 4.

Henry Gray, Esq.,

Dear Sir,—I beg to inform you that at the last annual meeting of the Central Canada Veterinary Association, held in the city of Ottawa on January 23, 1914, the members expressed their deep regret over the great loss the veterinary profession throughout the world has sustained in the death of Mr. William Hunting.

They felt that although they had not the honour of knowing him personally, they knew him through his various works, and admired him. In virtue thereof it was resolved that in view of the great benefit the profession has experienced through his labours they would like to assist you in your very commendable movement. Unfortunately, the funds of this Association are limited, but its members hope you will be good enough to accept this small subscription as a small token of their appreciation of one who worked unceasingly and unselfishly for the betterment of his profession, and whose accomplishments will make his name an honoured one for future years —Very sincerely yours,

(Signed) CHARLES EVANS, Sec.-Treas.

ARMY VETERINARY SERVICE.

Extract from *London Gazette*.

WAR OFFICE, WHITEHALL, March 20.

REGULAR FORCES. ARMY VETERINARY CORPS.

Lieut. W. St. J. F. McCartney is seconded for service with the Egyptian Army. Dated Feb. 1.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Lieut. T. Bell ceases to hold a commission in the T.F. Dated March 21.

Personal.

LEECH.—On 23rd March, at "Penlee Point," Kennington, Ashford, Kent, Winnie (née Hill), wife of the late Herbert William Leech, M.R.C.V.S., (died Feb. 16th, 1914), of a daughter.

Prof. METTAM has been elected to the Council (Committee of Science) of the Royal Irish Academy.

The following gentlemen have obtained the Diploma in Veterinary State Medicine, at the University of Manchester:—

Messrs. JOHN FACER, WILLIAM HALSTEAD, THOMAS MENZIES, H. L. TORRANCE.

POULTRY DISEASES AND THEIR TREATMENT. [Veterinary Medical Series, No. 2). Edit. D. M. Campbell. By B. F. Knapp, M.SC., D.V.S., Commissioner of Health, Spartanburg, South Carolina; Professor of Pathology, Division of Veterinary Medicine, Colorado Agric. Coll: Chairman of Committee on Diseases of the American Veterinary Association, 1911, Chicago.—*Amer. Journ. of Vet. Med.*, 1914.

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.
Pres: Mr. J. W. Hewson, M.R.C.V.S., Wigton
Hon. Sec. (pro tem.): Mr. F. W. Garnett, M.R.C.V.S., Dalegarth, Windermere
Meetings, Second Friday of Feb., June, and October

GLASGOW V.M.S.
Pres. Principal McCall.
Hon. Sec. Mr. J. Gibson, 16 Overdale Gdns, Langside, Glas.

ROYAL VETERINARY COLLEGE V.M.A.
Pres: Prof. E. Brayley Reynolds.
Hon. Sec: Mr. B. Gorton, M.R.C.V.S. *Assist*. Mr. E. E. Jelbart

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH
Pres: Mr. T. Douglas, M.R.C.V.S., Kilmarnock
Hon, Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S., Moore Street, Abattoir, Glasgow

NATIONAL ASSOCIATION OF VETERINARY INSPECTORS
Pres: Mr. J. Abson, F.R.C.V.S., Sheffield
Hon. Sec: Mr. Trevor Spencer, M.R.C.V.S., Kettering

MUNSTER VETERINARY INSPECTORS' ASSOCIATION
Pres: Mr. D. M. Barry, M.R.C.V.S., Mallow
Hon. Sec: Ma. T. I. Alexander, M.R.C.V.S., Kinsall

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.
Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
Hon. Sec: Mr. G. H. Locke, M.R.C.V.S. Grosvenor Street, Oxford-st., Manchester
Treas: Mr. J. B. Wolstenholme, F.R.C.V.S., Quay-street, Manchester

VICTORIA VETERINARY BENEVOLENT FUND.
Pres. Mr. R. C. Trigger, J.P., Newcastle, Staffs.
Hon. Sec. & Treas: Mr. W. Shipley, F.R.C.V.S. South Town. Great Yarmouth

COLONIAL SOCIETIES (*continued next page*)

VETERINARY ASSOCIATION OF NEW SOUTH WALES
Pres: Mr. S. T. D. Symons. M.R.C.V.S., Chief Inspr. of Stock
V. Pres: Maj. A. P. Gribben, P.V.O., M.R.C.V.S.
Hon. Sec. & Treas: Mr. Max. Henry, M.R.C.V.S., B.V.SC. (SYD). 56 Bridge Street, Sydney.

BRITISH COLUMBIA V.M.A.
Pres: Dr. Gibbons, M.R.C.V.S., Vancouver,
Hon. Pres: Dr. Hamilton, M.R.C.V.S., Victoria.
Sec., Treas., Registrar. Dr. T. Jagger, V.S., Vancouver.

ASSOCIATION MÉDÉCALE VÉTÉRINAIRE FRANÇAISE "LAVAL"
Sec: Mr. J. P. A. Haude, Montreal

PROVINCE OF QUEBEC V.M.A.
Hon. Sec. Mr. Gustave Boyer, Rigaud, P.Q

VETERINARY ASSOCIATION OF ALBERTA
Hon. Sec. Mr. C. H. H. Sweetapple, For Saskatchewan, Alta, Can.

ONTARIO V.A.
Pres: Mr. J. H. Tennent, V.S., London, Ontario
Sec: & Treas: Mr. L. A. Wilson, Toronto, Ontario

TRANSVAAL V.M.A.
Pres: Mr. C. E. Gray, P.V.S., Box 134, Pretoria.
Hon. Sec: Mr, P, Conacher, G.V.S., Box 877, Johannesburg

NATIONAL VETERINARY ASSOCIATION

Past President: Mr. W. Woods, F.R.C.V.S., Wigan
Sec:
Assist. Sec: Mr. W. L. Harrison, F.R.C.V.S.,
11 Anchor Terrace, Southwark Bridge, S.E.
Treas: Prof. G. H. Wooldridge, F.R.C.V.S.,
Ryl. Vet. Coll., Camden Town N.W.

Northern Branch:

Pres, W. A. Taylor, (F) Brick Street, Manchester
Hon. Sec. A. W. Noël Pillers, (F)
71 Smithdown Lane, Liverpool

LANCASHIRE V.M.A.

Pres: Mr. G. H. Locke, M.R.C.V.S.,
Grosvenor-street, Manchester
Hon. Sec. Mr. J. W. Brittlebank, M.R.C.V.S.,
Town Hall, Manchester
Hon. Treas: Mr. E. H. Stent, M.R.C.V.S., Preston-st, Hulme
Meetings, 1st Thursday in April, June, Sept., & Dec.

LIVERPOOL UNIVERSITY V.M.S.

Pres: Mr. J. P. Heyes, F.R.C.V.S., Wigan
Hon. Sec: Mr. A. Walker, M.R.C.V.S., Mill Lane, West Derby
Pathological Sec: Mr. D. C. Matheson, F.R.C.V.S.
Meetings, May, July, October, January.

MIDLAND COUNTIES V.M.A.

Pres: Mr. J. Malcolm, F.R.C.V.S., Birmingham
Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S.,
Camden House, High-st., West Bromwich
Hon. Treas. Mr. J. J. Burchnall, M.R.C.V.S., Barrow-on-Soar
Meetings, Second Tuesday, Wednesday, Thursday, and Friday alternately in Feb., May, Aug. and Nov.

NORTH OF ENGLAND V.M.A.

Pres:
Hon. Sec: T. T. Jack, M.R.C.V.S., 3 Elmwood Ter, Sunderland
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH MIDLAND VETERINARY ASSOCIATION

Pres: Mr. F. L. Somerset, M.R.C.V.S., Chesterfield
Hon. Sec: Mr. J. S. Lloyd, F.R.C.V.S., Sheffield

NORTH WALES V.M.A.

Pres: Mr. Hugh Williams, M.R.C.V.S., Ty Croes
Hon. Sec. Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.

Pres: Mr. J. M. Walker, F.R.C.V.S., Hartlepool
Hon. Sec. & Treas: Mr. J. H. Taylor, F.R.C.V.S.
Grange Road, Darlington
Meetings, First Friday, Mar., June, Sept. and Dec.

YORKSHIRE VET. ASSOCIATION

Pres: Mr. J. Abson, F.R.C.V.S., Norfolk Street, Sheffield
Hon. Sec; Mr. J Clarkson, M.R.C.V.S., Garforth, nr. Leeds
Hon. Treas: Mr. A. McCarmick, M.R.C.V.S.,
Kirkstall-road, Leeds

Southern Branch:

Pres. Sir Stewart Stockman, 4 Whitehall Place, S.W.
Sec. T. C. Toope, 34 High Street, Dover

CENTRAL V.S.

Pres. Prof. G. H. Wooldridge, R.V.Coll., Camden Town.
Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S.,
122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m.

EASTERN COUNTIES V.M.A.

Pres. Mr. W. L. Little, F.R.C.V.S., Great Yarmouth
Hon. Sec. & Treas: Mr. A. C. Holl, M.R.C.V.S
New Buckenham
Meetings, Second Tuesday, Feb., July and Sept.

LINCOLNSHIRE AND DISTRICT V.M.S.

Pres. Mr. C. W. Townsend, F.R.C.V.S.,
Long Stanton, Cambridge
Hon. Sec: & Treas: Mr. Tom Hicks, M.R.C.V.S.,
Boston Road, Sleaford
Meetings, Second Thursday Feb., June, and October

ROYAL COUNTIES V.M.A.

Pres: Mr. J. C. Coleman, M.R.C.V.S., Swindon
Hon. Sec. & Treas: Mr. G. P. Male, M.R.C.V.S., Reading
Meetings, Last Friday, Jan., April, July and Nov.

SOUTHERN COUNTIES V.S.

Pres: Mr. G. H. Livesey, M.R.C.V.S., Hove, Sussex
Hon. Sec: Mr. A. H. Archer, M.R.C.V.S., Southsea, Portsmouth
Hon. Treas: Mr. E. W. Baker, M.R.C.V.S., Wimborne
Meetings, Last Thursday, Mar., June and Sept.

SOUTH EASTERN V.A.

Pres. Mr. E. Lyne Dixson, M.R.C.V.S., Margate
Hon. Sec. & Treas. Mr. Theo. C. Toope, M.R.C.V.S.,
34 High Street, Dover
Meeting,

WESTERN COUNTIES V.M.A.

Pres: Mr. C. E. Perry, F.R.C.V.S., Staple Hill, Bristol.
Hon. Sec. Mr. W. Ascott, M.R.C.V.S., Bideford
Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Meetings, Third Thursday, March, July and November

Irish Branch:

Pres. Mr. W. Watson, Municipal Buildings, Dublin
Sec. Mr. P.D. Reavy, Leafield, Bundoran, Co. Donegal

CENTRAL V.A. OF IRELAND.

Pres: Mr. B. P. J. Mahony, M.R.C.V.S., Maryborough
Hon. Sec. Mr. E. C. Winter, F.R.C.V.S., Queen-st., Limerick
Treas: Mr. J. F. Healy, M.R.C.V.S., Midleton

CONNAUGHT V.M.A

Pres. Mr. D. Hamilton, M.R.C.V.S., Ballina
Hon. Sec. & Treas. Mr. A. J. Moffett, M.R.C.V.S., Galway

VET. MED. ASSN. OF IRELAND.

Pres: Mr. P. J. Howard, M.R.C.V.S., Ennis
Hon. Sec: Prof. J. J. O'Connor, M.R.C.V.S., R.V. Coll., Dublin
Hon. Treas: Prof. J. F. Craig, M.A., M.R.C.V.S.,
R.V. Coll., Dublin

NORTH OF IRELAND V.M.A.

Pres: Mr. J. A. Jordan, M.R.C.V.S., Belfast
Hon. Sec; Mr. J. Ewing Johnston, M.R.C.V.S., Belfast
Hon. Treas;

Scottish Branch:

Pres. Dr. O. Charnock Bradley, } Ryl. (Dick) Vet.
Hon. Sec. Prof. A, Gofton, } Coll: Edinburgh

NORTH OF SCOTLAND V.M.S.

Pres: Mr. W. Marshall, M.R.C.V.S., Aberdeen
Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S. Alford, Aberdeen
Meetings, Last Saturday in January and August

ROYAL SCOTTISH V.S.

Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.

SCOTTISH METROPOLITAN V.M.S.

Pres: Mr. J. Riddoch, M.R.C.V.S., Edinburgh
Hon. Sec. & Treas: Mr. Jas. Henderson, M.R.C.V.S.,
Public Health Dept., City Chambers, Edinburgh

WEST OF SCOTLAND V.M.A.

Pres: Prof. John R. McCall, M.R.C.V.S., Vety. Coll. Glasgow
Hon. Sec: Mr. J. F. Macintyre, M.R.C.V.S.,
19 Bank Street, Hillhead, Glasgow
Hon. Treas: Mr. Geo. W. Weir, M.R.C.V.S.,
88 Crookston Street, Glasgow
Meetings, Second Wednesday, May, Oct. and January.

COLONIAL SOCIETIES: *(see preceding page)*

CAPE OF GOOD HOPE V.M.S.

Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. J. W. Crowhurst, F.R.C.V.S
Longmarket Street, Cape Town

CENTRAL CANADA V.A.

Pres. Mr. Geo. Hilton
Hon. Sec: Mr. Charles Evans, Ottawa

VET. ASSN. OF MANITOBA.

Pres: Dr. W. R. Taylor, Portage la Prairie
Hon. Sec. & Treas: Mr. Wm. Hilton, Winnipeg

NATAL VETERINARY MEDICAL ASSOCIATION.

Pres. Mr. F. J. Carless, M.R.C.V.S., Mooi River
Hon. Sec. & Treas. Mr. A W. Shilston,
Vety. Research Laboratory, Pietermaritzburg